The Future of Technology in the State College Area School District
Opportunities and Directions

Board of School Directors
December 2010

Introduction

"The National Education Technology Plan 2010 (NETP2010) calls for revolutionary transformation rather than evolutionary tinkering. It urges our education system at all levels to
- Be clear about the outcomes we seek.
- Collaborate to redesign structures and processes for effectiveness, efficiency, and flexibility.
- Continually monitor and measure our performance.
- Hold ourselves accountable for progress and results every step of the way."

"The NETP presents a model of learning powered by technology, with goals and recommendations in five essential areas: learning, assessment, teaching, infrastructure, and productivity."

- NETP2010 Executive Summary

"Answer the following:
- What are the outcomes we are working toward?
- In other words, 'why are we doing this?'
- Are we successful and how do we know?"

- Board commentary

We live in a technological era. Our responsibility is to educate generations of young people who know how to use technology for both formal and informal learning. In late summer and early fall of 2010 the Board of School Directors reviewed the SCASD Strategic Plan Midpoint Review prior to its submission to PDE on September 30. More than three hours of lively discussion during regular meetings focused on the state of technology in the SCASD and made clear the point that our collective energy must be more focused so that local public education is meeting or exceeding the expectations of a technology-laden world.

Contemporary technology offers the promise of unprecedented performance, adaptability, and cost-effectiveness for education. But this promise will be realized only if we commit to transformation within and around the public education system.[1] For example, students come to school with mobile devices that let them carry the Internet in their pockets. With such ubiquitous access to information, is it time to change what and how we teach? Do we ignore the informal learning enabled by technology outside school, or do we create similarly engaging and relevant experiences inside school and blend the two?

We propose that connectivity is the engine of this transformation. We divide our thinking somewhat arbitrarily at the year 2005. Prior to this date, computers were capable, often existing in standalone configurations or relying largely on hard-wired (Ethernet) networks for

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[1]U.S. Department of Education, Office of Educational Technology, *Transforming American Education: Learning Powered by Technology,* Washington, D.C., 2010

access to the Internet. During the connectivity revolution of the 21st century, however, we have seen explosive growth in the way computing devices are used. In particular, our ability to access information has been changed fundamentally in at least four ways:

- Improvements in wireless technology
- Growth in broadband solutions, especially home and public Internet access points
- Cellular broadband capability and mobility
- Converged technology, including smartphones and personal devices such as the Apple iPad.

The questions the Board poses are these:

- Why is technology necessary for learning in public education today?
- Is the SCASD well positioned for the connectivity revolution?
- Are we adequately supporting the technology expectations of faculty, students and parents?
- How do we execute an economically sustainable technology plan?

As an outgrowth of these discussions, the State College Area School District Board of School Directors tasked its Culture, Climate and Learning (CCL) Subcommittee to develop a cohesive vision for technology use in the District. The Subcommittee collected comments from all Board members, reviewed them to identify consistent themes, and met several times during the fall of 2010 to draft a set of recommendations for the Board's consideration. The complete summary of Board comments is provided in Appendix 1.

This report incorporates the concerns and opinions of the Board, summarizes the discussions of the CCL subcommittee, and presents directives to the administration for action in this and subsequent years. Our views are influenced strongly by the recent U.S. Department of Education National Education Technology Plan 2010 [NETP2010] (<http://www.ed.gov/technology/netp-2010>). Paraphrasing its authors, NETP2010 assumes the following:

- With technology we can provide engaging and powerful learning content, resources, and experiences and assessment systems that measure student learning in more complete, authentic, and meaningful ways.
- With technology-based learning and assessment systems, we can improve student learning and generate data that can be used to continuously improve the education system at all levels.
- With technology, we can execute collaborative teaching strategies combined with professional learning strategies that better prepare and enhance educators' competencies and expertise over the course of their careers.
- With technology, we can redesign and implement processes to produce better outcomes while achieving ever higher levels of productivity and efficiency across the education system.

Findings and recommendations of this report are organized thematically. Directives are intended to be clear, actionable and consistent with the NETP2010 goals.

As a governing body, the Board prescribes no specific methods to implement, monitor or evaluate these directives. Rather, the Board anticipates an administrative response and action plan that includes these elements will be presented to the Board prior to March 2011.

I. Technology to Enhance Teaching and Learning

"We know the learning objectives for each class. For over 150 years we have been teaching students through black/white boards, textbooks, programmed texts, lectures etc. As new ideas and technologies came into existence they were incorporated into the education process - all because they contributed to helping students attain the course objectives. When modern things like slide rules were introduced, their use made it easier and quicker for students to do the "rote" calculations and therefore freed up time for them to either learn higher level math, execute more problems for better reinforcement, or simply to apply time to other endeavors. With the advent of calculators even more time was freed and students were able to apply even more time to the study and less to the calculating. But everything was incorporated with the idea of helping students achieve course objectives."

<div align="right">- Board commentary</div>

A. *"Anytime/Anywhere" Access to Learning Resources*

The Board agrees with the NTEP2010 call for "anytime/anywhere" access to learning material and opportunities. Achieving this goal will require assistance on many levels. On the national level, Pennsylvania is the recipient of a Broadband Technology Opportunities Program (BTOP) grant which will increase the overall Internet connectivity in the Commonwealth. Regionally, the District obtains Internet connectivity via the Intermediate Unit.

Anytime/anywhere access to learning resources requires the District to think about how and when faculty, staff, parents and students can access the Internet and the SCASD network. Furthermore, the type of technology and the resources necessary for learning must be defined at the District level.

Anytime/anywhere access has potential benefit to the community at large. As the SCASD
Continuing Education and CTC programs expand, the Board anticipates a potential need for community (guest) access to Internet resources via the SCASD network.

Findings
1. Currently, connection of non-SCASD devices to the SCASD network is prohibited. While policies governing access for such devices devices have been promulgated on the national level (e.g., http://www.sandiego.edu/soles/centers/cepal/recent_studies/ ecd_project/index.php), local policies governing access for such devices devices do not exist.
2. No district standard codifies the format/availability of learning resources via the Internet.
3. SCASD resources for Internet connectivity are not regularly available to the public.

Recommendations
1. The Board should develop or modify District policies to ensure that use of personal Internet access devices within our schools can be safe, secure, and equitable; creating richer, cost effective learning opportunities for all students.
2. The Administration, in conjunction with the CAC for Technology, should provide guidance for bringing personal Internet access devices to school, securely adding them to District wireless networks, and incorporating them into instruction.

3. The Administration should develop a plan for placing learning materials and course content on-line so that students and their parents/guardians can access them "anytime/anywhere."
4. All faculty should put assignments on line so that they are accessible to parents for review and to students for collaboration.
5. Electronic learning records should be available to parents of all children under 18, and to all students aged 18 and over.
6. Intermediate Unit representatives should monitor the Pennsylvania BTOP progress with a goal of less expensive and faster Internet connectivity.
7. The District should investigate opportunities to improve student Internet access outside of normal school hours to decrease the "digital divide" between those families with Internet access and those without. If a need exists, one way it could be addressed is a private fundraising effort.
8. The SCASD should investigate potential mechanisms to create "anyone" (i.e., public and community) guest wireless Internet access that could be used by continuing education students and visitors.
9. Recommendations 1-5 should be completed prior to the beginning of the 2011-2012 school year.

B. Re-examination of the SCASD One-to-One Computing Initiative

"I think that the 1-to-1 computer initiative that the district has been following for a number of years now has brought great benefit to our students and teachers. The intent was to move towards the 1-to-1 goal in a gradual roll-out, supported by professional development, obviously as finances allowed. The fact that we have not reached the goal reflects the fact that the board has had to make difficult financial decisions, not that the plan was flawed."

"I have yet to see the benefit of 1-to-1 computers versus group work on computers."
                                                            - Board commentary

When the "one-to-one" computing report was originally written[2] the paradigm was a district-issued laptop computer for every teacher and learner. Lacking the resources to supply laptops to all learners, the Board opted for a measured approach that used locally and state funded laptop carts to share computers between classrooms during school hours. As a result, one-to-one computing occurs sporadically in the SCASD.

Since that time, we have witnessed the emergence of many types of Internet access devices from smart phones to netbooks to tablet computers (e.g. iPads, Windows and Android tablets), the elimination of state funding to support the one-to-one laptop initiative, and the most constrained fiscal climate in recent memory.

Findings
1. If take home computers are issued to learners and appropriate educational materials are available online, then one-to-one computing can be a viable strategy to create anywhere/anytime access to learning resources.
2. The one-to-one plan approved by the SCASD Board of School Directors in 2005 (Option two) was not designed to achieve the goal of anywhere/anytime access. In the District's current fiscal reality, making one-to-one compatible with the anywhere/anytime goal is more cost prohibitive than when it was first considered (and rejected).

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[2]One-to-one Computing Proposal, State College Area School District, December 2005.

3. Advances in connectivity, especially "cloud computing," have eclipsed elements of the current SCASD one-to-one computing initiative.

Recommendations
In addition to recommendations I.A1-I.A3, we add the following:
1. The SCASD should investigate whether and at what grades more recent or emerging Internet access devices (e.g., IPads, thin client and mobile computing devices) would be appropriate to satisfy or augment "one-to-one" computing goals.
2. With increased fiscal constraints on all parts of the District budget, the Administration should seek ways to achieve "one-to-one" computing employing a variety of personal and district-owned Internet access devices while maintaining reasonable lifecycle funding for district-owned devices.
3. The Director of Technology should continue to improve the wireless connectivity in all buildings and outside areas in the District.
4. One-to-one and infrastructure recommendations should be implemented in a manner that best supports the goal of anywhere/anytime access to learning resources.

C. Technology Competencies for the 21st Century

"How does the district assess the IT competence of potential teacher hires? Are there standard expectations?"

"Given the state of technology today, an aspect of IT education is simply teaching students how to use of the technology - turn it on and off, use a mouse, etc."
- Board commentary

Recommendations
1. The District should revisit and expand their objectives to determine student technology competence. They may be part of a broader set of SCASD grade/domain specific 21st century skills (TBD) that include critical thinking, complex problem solving, collaboration and multimedia communication.
2. District technology standards and competencies should be specific:
   - for each grade level
   - by subject area
   - for existing instructional staff
   - for new teachers
3. Development of technology standards and competencies should be highly inclusive, incorporating feedback from faculty, students, and administration.
4. SCASD should increase feedback to assure that technology competence has been achieved by defining and implementing online/virtual assessment instruments.
5. Inclusion of technology into the design of our new 21st century learning spaces should be done with an eye toward long-term adaptability and sustainability. It is our belief that this will maximize the technology investment while maintaining flexible, collaborative learning environments.

D. "Technology Rich" Course Sections

"At the HS level, some districts teach parallel sections of courses: technology intensive and technology light. With the intensive section students supply their own laptops based on a district standard. The technology light section uses only district-supplied technology (e.g., smartboards, projectors, teacher workstations, etc.) Consider this approach and compare learning outcomes between the sections."

Findings
> One limitation to expanding the use of technology in classroom learning is simply the availability of computers. Adopting the "anywhere/anytime" philosophy for personal Internet devices can widen or eliminate this bottleneck.

Recommendations
1. SCASD should develop "technology rich" sections of existing courses at the High School and Delta Program where students can use their own (personal or District property) Internet access device.
2. The administration should create a plan to assess whether "technology rich" sections produce better or different learning outcomes than "traditional" or "technology light" implementations.

E. State College Virtual School

> In 2009 the SCASD began to place some locally-developed learning resources online. This "Virtual School " material can be used in cases of prolonged absence due to illness, pandemic situations, and perhaps even during a semester abroad.

Recommendation
1. The District should continue to develop the State College Virtual School as outlined in the Educational Technology Report to PDE. In addition to Virtual School courses, course content/material could be used in a blended learning model with traditional courses, and to enhance "technology rich" course sections.

II. Technology to Augment Assessment

> "Given the decision of the district to move forward with MAP, what opportunities are there to expand the use of "mixed classes" not bounded by grades within the district? If that is a direction we are considering, what are the requirements for technology in this environment? How do those priorities compete against other student laptop requirements across the district? We currently have opportunities for the fast runners to run at the high school than we do at the elementary level. Perhaps technology in the elementary might increase this opportunity."

> "The Classroom for the Future reports document a need to pair technology implementation with learning outcomes. What is the SCASD plan? If learning is not improved, the justification for technology changes."
> <div align="right">- Board commentary</div>

The Board commends the Administration on the acquisition of the Measuring Academic Progress (MAP) software. We believe that it will aid both teachers and learners with the timely assessment of academic progress. We anticipate that MAP and solutions like it will provide a shorter learning-comprehension-feedback loop and streamline the assessment of learning outcomes.

Recommendations
1. The SCASD should continue to evaluate and implement ePortfolio solutions and software with the goal of a demonstrable on-line path of growth for each District

student. This growth path should include definable learning outcomes consistent with SCASD standards for technology competence (i.e., Recommendation I.C.1).
2. As faculty better understand the District on-line assessment and reporting tools, the Board recommends the use of these systems to provide better and more timely feedback to parents/guardians, consistent with Recommendation I.A.5.

III. Technology to Foster Professional Development

"When/if we roll out technology advances, there needs to be some training/best practice sharing of the methods for our teachers to use the capabilities provided by this new equipment. Similarly, there are bound to be some 'lessons learned' by districts which have already been down this path (no sense in making the same mistakes they did)."

"Review professional development plans for staff. Some research suggests that inadequate professional development (<10 hrs) is less effective than no training at all."
- Board commentary

The Board recognizes that increased use of technology for teaching and learning requires additional staff professional development. The Board agrees with the NETP2010 plan which recommends the creation of "communities of practice" to augment professional development and encourage peer learning. It is expected that these communities of practice will allow for the shared use of curriculum as well as best practices for teaching and learning District-wide. Creating on-line communities of practice can bridge the geographic boundaries and enable greater collaboration between grade levels and schools.

Recommendations
1. SCASD should create virtual community(ies) of practice where instructional best practices are shared
2. Administration and staff should investigate ways to use these virtual communities of practice to augment pedagogy (virtual help desks)

IV. Technology for Improving Workflows

"Technology needs to support two things - education and productivity. There are opportunities for us to use technology to ease workload burdens on our teachers. Perhaps this is what the superintendent is referring to when he talks about workflow solutions. So far I haven't seen anything on paper that outlines what we should be doing in that arena"
- Board commentary

Information Technology (IT) is often perceived as a cost center or expense, but in the case of defining or improving workflows, IT can yield substantial returns on investment.

Recommendations
1. As the District upgrades its current workflow software, the Board encourages an ongoing analysis of the financial impact of workflow solutions.
The Board encourages all employees, students, and parents to suggest processes which can be automated or improved with the addition of technology.

V. Summary of Board Directives and Recommendations

The directives and recommendations summarized in this section are obligatory "first steps" for the next phase of technology implementation in the SCASD. They are consistent with the USDOE National Educational Technology Plan (NETP2010). Released in November 2010, the plan may be accessed at: (http://www2.ed.gov/about/offices/list/os/technology/techreports.html).

Technology competence

1. Define and distribute District-wide technology standards and competencies ….
   - for each grade level
   - by subject area
   - for existing instructional staff
   - for new teachers

   Criteria for technology competence may be part of a broader set of SCASD grade/domain specific 21st century skills (TBD) that include critical thinking, complex problem solving, collaboration and multimedia communication.

2. Increase accountability by defining and implementing online/virtual assessment instruments for technology competence.

Access to learning resources

1. Everyone
   - Learning resources shall be available anytime/anywhere
   - All faculty/staff/students shall have an internet access device. While devices may not necessarily be supplied by district, they must be compatible with district standards for educational utility and security (TBD).
2. Students/parents
   - Develop and implement technology-rich sections of existing courses.
   - Increase the district's offering of online learning opportunities.
   - Make electronic learning records available to parents of all children under 18; furthermore, make them available to students 18 and over.
3. Faculty and staff
   - Create virtual community(ies) of practice where instructional best practices are shared.
   - Use virtual communities of practice to augment pedagogy (virtual help desks).

Other ideas

   - Improve assessment (frequency and quality of feedback to teachers and students) through technology.
   - All employees, students, and parents should be encouraged to suggest

processes which can be automated or improved with the addition of technology.

- Adopt Universal Design for Learning standards (http://www.cast.org/research/udl/index.html) for all virtual learning resources.

Timeline for implementation

1. Response to the Board of School Directors with draft implementation plan before March 2011.
2. Policies, procedures and planning for personal Internet devices in the schools should be complete prior to the 2011-2012 school year.

Summary of Board questions and comments regarding the use of technology in the SCASD

Board of School Directors
October 2010

General

The SCASD has been engaged in the laptop initiative for approximately six years. Since its inception the following changes have occurred that suggest that <u>a true mid-point review of the district's technology plan is necessary</u> **before** <u>moving forward</u>:

- Turnover of key administrators
- Significant board turnover
- The district has years of experience with using student laptops
- survey of teachers to capture data on usage and actual/perceived outcomes
- A greater body of research exists in the area of student laptop use in the classroom than when the district established a plan.
- The financial challenges in the district have become much more serious, and the competition for limited resources is keener.
- New technology has emerged that merits consideration for inclusion in the district's technology plan.

Learning outcomes

Answer the following:

- What are the outcomes we are working toward?
- In other words, "why are we doing this?"
- Are we successful and how do we know?

We know the learning objectives for each class. For over 150 years we have been teaching students through black/white boards, textbooks, programmed texts, lectures etc. As new ideas and technologies came into existence they were incorporated into the education process - all because they contributed to helping students attain the course objectives. When modern things like slide rules were introduced, their use made it easier and quicker for students to do the "rote" calculations and therefore freed up time for them to either learn higher level math, execute more problems for better reinforcement, or simply to apply time to other endeavors. With the advent of calculators even more time was freed and students were able to apply even more time to the study and less to the calculating. But everything was incorporated with the idea of helping students achieve course objectives.

Provide a detailed, SCASD specific definition of "21st century skills" and describe how the technology implementation plan contributes. The only example given to date is the e-portfolio.

The CFF reports document a need to pair technology implementation with learning

outcomes. What is the SCASD plan? If learning is not improved, the justification for technology changes.

The feedback we've received from teachers has indicated that the closer we get to 1-1, the more ways they discover to use it to improve instruction. The gradual, consistent roll-out of technology has served us well in this regard, allowing us to make use of what we learn as we go along.

So relating to our today problem - - use of technology as part of the education process. I am convinced that our teachers believe that using computers, smart boards, etc. aid the education process. What I have not seen is a correlation between technology and its impact on helping students to achieve the educational objectives. Common sense leads me to believe that it exists, and I'd bet that computer manufacturers have information in spades, but I have not seen it.

Capture and share best practices for teaching/learning with technology. Consider your own TED conference, led by SCASD or the IU. Make attendance part of professional development.

Survey instructional staff on the status of the technology in SCASD. What works and what doesn't?

Given the state of technology today, an aspect of IT education is simply teaching students how to use of the technology - turn it on and off, use a mouse, etc.

Provide the current board members with a summary of the **research/in-house experiences** that will influence the course forward:
-- What does current research tell us regarding the benefits/challenges of using student laptops?
-- What insights does research provide us with respect to the effectiveness of student laptops in elementary grades? Middle and High School (by each of the four core subject areas)? For example: as shared model (collaboration) works best at the elementary, the ROI (increase in achievement) is greatest in Language Arts and lowest in Math.
-- Is our roll out plan consistent with the research? Are we plowing the most fertile fields first, or is our deployment dictated by facility/staff readiness?
-- Given the decision of the district to move forward with MAP, what opportunities are there to expand the use of "mixed classes" not bounded by grades within the district? If that is a direction we are considering, what are the requirements for technology in this environment? How do those priorities compete against other student laptop requirements across the district? We currently have opportunities for the fast runners to run at the high school than we do at the elementary level. Perhaps technology in the elementary might increase this opportunity.
-- What are the possibilities with respect to using emerging technologies -- to enhance instruction and/or reduce cost?

Choice of technology

Need specific costing out of Mac vs. PC platforms.

Is there a more cost effective and educationally appropriate platform for lower elementary grades? One size does not fit all.

Thin-client solutions rather than stand alone?

Are DVD burners necessary on every machine? Wouldn't a few USB burners be more economical?

How does the district determine when a Mac vs. a PC platform is more appropriate?   In some cases, one platform may offer a solution when the other does not, especially when a specific software package is necessary for educational purposes and that package is not cross-platform.

Provide detailed and comprehensive cost comparisons for Dell and Mac products to include netbooks and other technologies.

One-to-one computing
After reviewing the initial recommendation from the CAC for technology, and reviewing the IT presentation to the board on September 10, 2007 meeting, I conclude that the focus of the district should be on the laptop initiative as reflected in the shared cart approach. Discussions of one-to-one as defined as one take home computer for each child are premature and do not reflect the recommendations "approved" by the board.

I think that the 1 to 1 computer initiative that the district has been following for a number of years now has brought great benefit to our students and teachers. The intent was to move towards the 1 to 1 goal in a gradual roll-out, supported by professional development, obviously as finances allowed. The fact that we have not reached the goal reflects the fact that the board has had to make difficult financial decisions, not that the plan was flawed.

One-to-one means many things, such as:
1. Computer/student ratio of 1/1 district-wide
2. Computer/student ratio of 1/1 in an individual class that requires technology
3. Take home computers for students (like textbooks)

Choice 2 was adopted by the district in 2003-2005 and implemented as laptop carts. Describe the district rollout plan in detail (planned vs. actual). Choice 3 is now being done in Delta. It's potentially the most troublesome because of loss, theft, and damage. Other districts require an insurance payment; some use remote locator technology. The Board should have details on SCASD implementation of take home computing. What is the justification for deviating from the plan approved in 2003?

By alternatives to 1 to 1 computing....add research for small groups (a few students) working together. We have seen some of this information - the video from Jim Leous for example. Perhaps, the plan is different for different age groups. To see a collaboration of all the

information and a conclusion by our Administration/ Technology CAC.

Review research related to small group computing (several students and one shared computer). This approach enhances collaborative skills

I have yet to see the benefit of 1-1 computers versus group work on computers.

It may be that as we continue to learn what works, it will cause us to change our strategy, but my preference is for this continued, incremental move in the direction of 1-1. (With the caveat that we should continue to investigate the possibilities of less-expensive options, where educationally appropriate)

One of my friends that works in several elementary schools has told me she doesn't see one-to-one computing as a priority for these students. Yes, it may be great, but where does it rate when we look at the big picture and cuts we will need to make? This maybe wants vs. needs...and maybe we need a plan that offers more opportunities for students with technology, but that may not include each individual student is entitled to have their own school owned computer. I would be surprised if most students don't have access at home to a computer.

CFF was designed for HS core classes only. Have we achieved this minimum goal?

Interim plans/solutions
At the HS level, some districts teach parallel sections of courses: technology intensive and technology light. With the intensive section students supply their own laptops based on a district standard. The technology light uses only district-supplied technology (e.g., smartboards, projectors, teacher workstations, etc.) Consider this approach and compare learning outcomes between the sections.

At the elementary level, use a student/computer ratio greater than 1/1 to increase technology availability throughout the day. This creates greater availability of technology without any cost, increases collaboration, and could be either an endpoint or a transition to 1/1.

Alternatives to 1 to 1 computing....add research for small groups (a few students) working together. We have seen some of this information - the video from Jim Leous for example. Perhaps, the plan is different for different age groups.

I support continuing in the current direction until the administration provides the board with an alternative that they believe clearly justifies we change direction for educational reasons. I would agree with several others that the CAC for Technology has the expertise to provide the Administration with helpful input in any review of our current plan and any changes that might be important. Among many, I would be interested in seeing the Technology CAC's input on the following issues: 1) the 1 to 1 vs. group use issue that has been raised, 2) whether there are other technologies that we should consider investing in, 3) what data should we be collecting to evaluate our technology use, and 4) are there additional strategies we should

adopt to support our teachers to use technology effectively.

Funding
Documented energy savings should be reinvested in technology. It's revenue neutral but adds technology funding. Use this as a challenge in the schools to encourage energy savings.

Lifecycle replacement plans?

With increased numbers of computer comes a requirement for increased number of staff (operations and maintenance). Provide a comprehensive financial plan for expanded technology implementation using full cost accounting (hardware, software, personnel, service and operations contracts, etc).

I am sure having more technology than we currently do would be better. However, as with everything we need to weigh the costs. We are going to have tough decisions with 1.4% index, and if I would have to choose computers vs. low student to teacher ratio in the elementary schools - teachers would get my vote. If we are talking about anecdotal cases, we need to be aware that the situations can be different.

Administration
Describe how all of the information is collated to form a joint conclusion by our Administration/Technology CAC.

Technology should not be put in a silo. It supports both education and operation of the school district. How are these inputs made? How do educational decisions affect IT decisions and vice-versa? Who/what are the coordinating entities and how is their deliberation used to formulate an administrative recommendation to the board?

Additional staffing (IT and other) to support full deployment of the shared laptop cart initiative.

The administration needs to come before the Board with a technology plan that goes into detail as to what are the benefits of each option. They need to explain how the technology will add to attainment of educational objectives, and they have to give an in depth analysis of what computers we have where they are, where we need them, an implementation plan, a plan for training teachers how to utilize the technology in the classroom to assist in achieving the educational goals, etc.

Provide the current board members with a summary of the district's current IT equipment status:
-- Deployment of Laptops/PC's by school, grade, subject
-- Current **usage/demand** of Laptops/PC's by school, grade, subject
-- What is the current standard laptop configuration and cost, etc. for elementary, middle, high school. Cost should include all back of the house costs broken out in detail.

Survey the teachers and students (as applicable) to determine the following: Do they use student laptops for instruction? How often? What would it take to get them to use them more? What do they perceive as the benefits--How are they measured? Is the professional development adequate? What do they think about Mac, Dell, Netbooks, and other technology? Is the technology meeting their specific needs?

District operations

Technology needs to support two things - education and productivity. There are opportunities for us to use technology to ease workload burdens on our teachers. Perhaps this is what Rich is referring to when he talks about workflow solutions. So far I haven't seen anything on paper that outlines what we should be doing in that arena

Provide the current board members with a summary of the district's current personnel status:
--   Explanation of Professional Development for teachers
--   Status of Professional Development --number of teachers at each stage
--   Current staffing (IT and other) to support this initiative.

How does the district assess the IT competence of potential teacher hires? Are there standard expectations?

Review professional development plans for staff. Some research suggests that inadequate professional development (<10 hrs) is less effective than no training at all.

When/if we roll out technology advances, there needs to be some training/best practice sharing of the methods for our teachers to use the capabilities provided by this new equipment. Similarly, there are bound to be some "lessons learned" by districts which have already been down this path. (no sense in making the same mistakes they did)

Illustration of ideal technology briefing

I.   Integration of technology
- a. the research behind 1 to 1 in the classroom
- b. how technology aids in achieving education objectives
- c. alternatives to 1 to 1
- d. recommendation

II.   District technology parameters
- a. 1 to 1 in Senior high school to grade 5
- b. 2/3 grades to 1 4th grade and below

III.   Equipment available
- a. apple (models/cost)
- b. PC (models/cost)
- c. Comparisons of both
- d. Recommendation

IV.   Proposed implementation plan (illustrative only)

Year	quantity	distribution	
2010	300	HS Seniors	
2011	300	5th grade	
2012	xxxx		xxxxx
ETC.			

Life cycle plan

V. Staff training and development of Best practices

    Who, what, when, where, and how